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ABSTRACT

The study examined the efficacy of a stress management training procedure for reducing anxiety and depression in parents of severely handicapped children between the ages of 4 and 16. Thirty-six parents were randomly assigned to treatment or control groups which completed pre- and post-measures of the State Trait Anxiety Inventory (STAI) and the Beck Depression Inventory (BDS). Participants in the treatment group attended weekly 2-hour classes for 10 weeks, during which they were taught (1) self-monitoring of stressful events and their physiological reactions to those events; (2) muscle relaxation skills; and (3) modification of cognitions associated with distress. Analysis of descriptive measures showed that the groups were equivalent in regard to age, income, education, social support, stress, and the child's maladaptive behavior. Among results was that the experimental group, which had a higher overall measure of depression at pretest than did the control group, had a lower overall measure of depression at posttest, while the control group's depression score increased slightly. Analysis of the social validation measures showed that participating parents rated all elements of the treatment positively. A 36-item reference list is appended. (JW)

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STRESS MANAGEMENT TRAINING FOR PARENTS OF SEVERELY HANDICAPPED CHILDREN

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Some research on families of handicapped children has explored the paradigms of stress and coping (e.g., Friedrich, Wilturner, and Cohen, 1985; Gallagher, Beckman, Cross, 1983; Schilling and Schinke, 1984). The emphasis within this work has been on determining the correlates of stress and the nature of successful adaptations to events that tax a family's resources. Despite diverse definitions and methodologies, a consistent finding is that parents of handicapped children are vulnerable to psychological distress that is associated with problems of daily living (e.g., Schilling, Gilchrist, and Shinke, 1982). These symptoms may include anxiety and depression. For example, Breslau, Staruch and Mortimer (1982) found that parents of handicapped children were significantly more depressed than a matched comparison group of parents of nonhandicapped children.

Everyday stressors include events that are commonly experienced by any family such as employment problems, illness of a family member, financial difficulties, and small aversive events such as a car breaking down (Delongis, 1985; Kanner, Coyne, Schaefer, & Lazarus, 1981). For parents of handicapped children, common sources of stress also include events that are more probable with a handicapped child, such as extra care-giving demands, difficulties in obtaining child care, behavior problems and conflicts with professional service providers (Gallagher et al, 1983; Singer, 1985).

Anxiety and depression have been shown to be common sequelae of stressful life events (Derogatis, 1982; Pearlin, Menaghan, Lerberman, Mullan, 1981). In fact, these psychological problems may be viewed both as contributors to stress and as consequences of it. That is, anxiety and depression can be outcomes of stressful life events, and it is

likely that the presence of anxiety and depression interact with coping resources in ways that make parents more vulnerable to environmental stressors (Friedrich et al, 1983; Pearlin et al, 1981). For example, high levels of anxiety have been shown to restrict decision-making skills (Janis, 1982). Similarly, parental depression is associated with deficits in parenting skills that may exacerbate problem behaviors or emotional problems in children of depressed parents (Biglan and Hops, in press).

Correlational research has identified a constellation of variables that appear to interact in complex ways to produce stress and resultant psychological distress (e.g., Bristol and Schopler, 1984; Wright, Granger, & Sameroff, 1984). Child characteristics such as behavior problems and deficits in adaptive living skills have been identified as correlates of distress (Breslau et al, 1982; Bristol and Schopler, 1984). Social support, particularly a positive marital relationship, seems to function as a possible mediator of stress (Friedrich, 1979). Other resources have also been identified as contributors to effective coping in families with handicapped children. These include specific parental beliefs about developmental disabilities, general beliefs about self-efficacy, and family cohesiveness (Bristol and Schopler, 1984; Friedrich, Wilturner, and Cohen, 1985; McCubbin et al, 1982).

Although much work has been done to identify causes of parental stress and correlates of effective coping, there have been few empirical demonstrations of effective techniques for alleviating stress and the resultant psychological distress associated with parenting a handicapped child. Identification and implementation of effective interventions to alleviate psychological distress associated with stressful home and

other environments could be an important component of an assistance model for parents of disabled children. Recently, researchers have reported on exploratory efforts to teach personal coping responses to parents (Peterson, 1982; Schinke and Schilling, 1984). Self-management techniques such as self- monitoring, relaxation training and cognitive self control have been effective in alleviating physical and psychological symptoms of people who were suffering the effects of stressful life situations (Deffenbacher and Suinn, 1982; Rosenbaum and Merbaum, 1984). These procedures appear promising as treatment procedures for parents of handicapped children who are experiencing stress-related psychological distress (Peterson, 1982). However, there have been no controlled experimental studies that have investigated the efficacy of these self-management treatments for parents of children who have handicaps. The purpose of the study reported here was to evaluate the efficacy of such a self-management treatment package for reducing the psychological distress of parents of severely handicapped children.

Method

Subjects

The subjects were 36 parents of children enrolled in special education classes for severely handicapped students in a metropolitan area of approximately 200,000 in the Pacific Northwest. The parents were recruited through a local direction service agency. This agency was already providing case management services to assist these parents to obtain needed assistance from community service providers (Zeller, 1980). Subjects were either the natural or adoptive parent.

Demographic information was collected on a printed questionnaire form on which response alternatives to questions about income and education were in the form of categories. The median reported income category for the sample was $12,500 with a range from "less than $5,000" to "more than $25,000". Eleven of the families had poverty level incomes ($10,600 for a family of four). The median reported education level category of parents was "some college" with a range from "did not finish high school" to "finished college".

All children of the participating parents qualified for public school services for severely handicapped children. In the state where the study was conducted, students qualify for these services if they are assigned any of the following diagnostic labels: moderate, severe, or profound mental retardation; autism; and severe neuromuscular disability. The median age of the severely handicapped children was 11 years of age, with a range from 4 to 16 years of age.

The children were evaluated on the Behavior Development Survey (BDS), a research version of the Adaptive Behavior Scale (Nihara, Foster, Shellhaas, and Leland, 1969). For purposes of score interpretation for description of our sample, we calculated BDS percentiles by comparing our sample data with the BDS normative sample of moderately retarded children living in the community. On the BDS factor I, Personal Self Sufficiency, the median percentile ranking of the disabled children of the parents in our sample was the 60th, with a percentile range from the 10th to the 90th. On BDS factor II, Community Self Sufficiency, the median percentile ranking for the disabled children was the 70th, with a percentile range from the 10th to the 90th. On the BDS factor III,

Personal-Social Responsibility, the median percentile ranking for the disabled children was the 55th, with a range from the 10th to the 90th.

After informed consent was obtained, parents were randomly assigned to either a treatment or waiting list control group. Couples were assigned as couples. Proportional stratified random assignment was used to assure that there were proportions of single and two-parent families in each group equal to the proportions of such families in the pool of applicants for the project.

Measures

Three kinds of measures were used: descriptive, dependent, and social validation. The descriptive measures were used to determine that the experimental and control groups were equivalent initially on characteristics that have been correlated with stress in previous research. These descriptive variables were:

a) the child's adaptive behavior performance level;

b) the handicapped child's maladaptive behavior performance level;

c) a parent report of use and satisfaction with sources of social support;

d) a measure of stress associated with parenting a handicapped child.

The instrument used to measure childrens' levels of adaptive and aberrant behaviors was the Behavior Development Survey (BDS), a standardized research version of the AAMD Adaptive Behavior Scale (Nihira, Foster, Shellhaas, & Leland, 1969). The BDS is a 73-item rating scale that parents completed. Social support was measured using the Inventory of Parents Experiences (Crnic, Ragozin, and Greenberg, 1981), a 54-item self-report survey that measures parents' contacts with

formal and informal sources of social support and their satisfaction with these sources of support. Stress associated with parenting a handicapped child was measured with the Questionnaire on Resources and Stress (QRS), Short Form, (Friedrich, Greenberg, and Crnic, 1983). The QRS-Short Form is a standardized 52-item instrument on which respondents (parents in this case) select "true" or "false" to statements of parent and family problems attributed to raising a handicapped child.

The dependent variables in this study were measures of parental anxiety and depression. These psychological constructs have been widely used in stress research (Derogatis, 1982). Anxiety was measured with the State Trait Anxiety Inventory (STAI) (Speilberger, Gorsuch, and Lushene, 1970). The STAI consists of two scales, the state scale and the trait scale. Each scale is a 20-item symptom-mood inventory. The trait scale asks people to evaluate how they feel generally, whereas the state scale asks them to judge their symptoms and mood at the time of responding to the instrument. For the purposes of this study, the two scales were treated as two different dependent variables because state and trait measures have been shown to be differentially sensitive to stress management interventions (Derogatis, 1982). Each of the STAI scales is scored to yield a total, with higher scores indicating increased anxiety. Empirical norms have been developed for the STAI with samples of college students, prisoners and mental hospital patients. Cronbach alpha internal consistency estimates for the STAI range from $\underline{r}_{\alpha} = .83$ to $\underline{r}_{\alpha} = .92$, and test-retest reliability estimates for the Trait Scale range from $\underline{r}_{tt} = .86$ to $\underline{r}_{tt} = .76$ (Speilberger et al, 1970).

Depression was measured with the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21-item symptom and attitude inventory. Each item represents a characteristic manifestation of depression (e.g. pessimism, self-dislike, fatigue, hopelessness). The inventory yields a total score with high scores representing more severe depression. The reported internal consistency reliability of the BDI is $\underline{r}_{\alpha} = .86$ and numerous studies have established evidence for concurrent validity (Derogatis, 1982).

We also used a social validation measure to assess parents' satisfaction with the treatment procedures and their evaluation of the various treatment components. Such measures are used to document the extent to which consumers of treatments (parents, in this study) regard those treatments as efficacious (Kazdin and Matson, 1981). The instrument had 14 items describing different components of the treatment. Parents were asked to rate each item on a 4-point scale: 0 = not at all helpful, 1 = somewhat helpful, 2 = helpful, 3 = extremely helpful.

Procedures

Control group subjects were assigned to a waiting list for treatment subsequent to the intervention with the experimental group. During the waiting period they were provided with usual case management services from a direction service agency so that they could obtain needed services if they so chose. These services were unrelated to the research activities described here and were available to all clients of the direction service agency. The same direction services were available to the treatment group.

Participants in the treatment group attended 2-hour classes once a week for 10 weeks. Classes were held in the meeting rooms of a research institute. They were led by a licensed clinical psychologist and a certificated special educator. During the classes, parents were provided with in-home respite care for their handicapped child through a local respite care agency in order to permit them to come to the weekly meetings.

Classes followed a format of lecture, demonstration and discussion. Parents were given homework assignments to encourage acquisition of new skills with repeated practice and to encourage generalization of the newly learned skills to home and work environments (Hillenberg & Collins, 1983). In the classes, parents were encouraged to discuss the stress management skills and to talk about stressors in their lives. The emphasis in these discussions was was on learning and applying specific skills rather than upon divulging feelings. The group leaders attempted to maintain a positive and supportive milieu in the classes by paraphrasing parent's statements, praising and encouraging applications of the techniques, and by eliciting supportive statements from other group members.

The techniques that were taught were: a) self-monitoring of stressful events and physiological reactions to them; b) muscle relaxation skills; and c) modification of cognitions associated with distress. Self-monitoring skills consisted of learning to recognize individualized symptoms of stress and to identify the events that were associated with these symptoms. For example, as one homework assignment, parents were asked to evaluate their levels of tension three times a day and to note any specific event that seemed to trigger

increased tension. At the same time they kept track of other physiological symptoms of stress such as headaches, indigestion, and insomnia.

Relaxation was taught in stages. The primary form of relaxation taught was a modified form of Progressive Muscle Relaxation (PMR) (Bernstein & Borhovec, 1973) a procedure in which people systematically tense and release large muscle groups. The parents initially practiced a long form (25-30 minutes) of relaxation in which they tensed and released major muscle groups twice while concentrating on bodily sensations. They were given tape recordings to guide daily home practice. After two weeks of experience with the long form of relaxation, they were taught a shorter modified version of PMR that could be accomplished without the use of tape recordings. Later in the course, parents were shown how to practice a very short form of relaxation that could be used in work and domestic situations in which it was not possible to take time away from a stressful event. Throughout the training, the emphasis was on relaxation as an active coping response (Goldfried & Trier, 1974).

Modification of thoughts associated with distress was taught using a procedure recommended by Goldfried & Goldfried (1975). In this procedure, parents learned to note their thoughts at times when they were feeling tense. Then they learned to recognize thoughts that were exaggerated or distorted and to coach themselves to think in more realistic terms. This procedure was taught through lecture and demonstration and with structured diaries that parents kept at home. This procedure is widely used as a component of many

cognitive/behavioral treatments for anxiety and depression (e.g. Deffenbacher and Suinn, 1982).

Data analysis

The questions investigated in this study were:

a) Do parents who have severely handicapped children and who are treated with stress management training show significant post-intervention differences on self-reported state anxiety measures compared to untreated parents?

b) Do treated parents show significant post-intervention differences in trait anxiety measures compared to untreated parents?

c) Do treated parents show significant post-intervention differences in self-reported depression measures compared with untreated parents?

d) Do parents who are treated rate the program components as useful and effective?

Parents completed all three measures (STAI state and trait measures and the Beck depression measure) upon applying for the treatment and upon completion of the 8-week treatment. The STAI measures were analyzed with analyses of covariance with the pretest measure as a covariate. The Beck Depression Inventory scores were analyzed with a mixed design analysis of variance with one between subjects variable (treatment and control groups) and one within subjects variable (pre and post time). ANOVA was used for the Beck measures instead of ANCOVA because preliminary analysis of the data showed that the Beck data did not meet the recommended conditions for ANCOVA -- a Pearson r=.70 or higher for the

correlation between the pretest scores and post-test scores (Keppel, 1982).

Other data analyses were also accomplished. We used t-tests in order to determine that the two groups were equivalent demographically on important descriptive measures subsequent to random assignment, and we summarized responses to the social validation measures with simple descriptive statistics: means and standard deviations.

Results

Analyses of the descriptive measures demonstrated no significant differences between the treatment and control groups on: parents' age, age of handicapped child, parents' income, and parents' educational attainment level. Similarly, no differences were found on a measure of maladaptive behavior of the handicapped child. There was a significant difference between the two groups on the adaptive behavior measure ($t=-2.24$, $df=35$, $p=.032$). The children of parents in the experimental group had lower overall scores of adaptive behavior than children in the control group.

Pretest and post-test means and standard deviations for both groups on the two STAI scales, along with the weighted means, are presented in Tables 1 and 2. A significant difference was found between the two groups on the post-test of the STAI State scale (adjusted for pre-test differences), $F(1,34)= 5.98$, $p=.02$). A significant difference also was found between the treatment and control groups on the post-test measure of the STAI Trait scale (adjusted for pretest differences), $F(1,34)=5.34$, $p=.027$.

Insert Tables 1 & 2 about here

Table 3 presents the pre- and post-test means and standard deviations for both groups on the Beck Depression Inventory. These scores were analyzed with a mixed design analysis of variance. No significant main effects were found, but there was significant interaction effect for group x time, $F(1,35)=5.3$, $p=.027$. The experimental group had a higher overall average measure of depression than did the control group at pretest. At post-test, the experimental group had a lower overall average measure of depression while the control group's depression score increased slightly.

Insert Table 3 about here

Analysis of the social validation measures showed that parents rated all elements of the treatment positively. Table 4 presents the items on the social validation questionnaire, with means and standard deviations for each item. On the scale of 0 to 3, the highest ratings were given for the following components of the treatment program: the group leader's talks on stress ($\bar{x}=2.5$, s.d.=.44), the chance to hear other parents talk about their situation ($\bar{x}=2.7$, s.d.=.64), and availability of respite care that enabled parent attendance at meetings($\bar{x}=2.6$, s.d.=.64). All participating parents noted that they would recommend the treatment to other parents of severely handicapped children. The lowest ratings were for: adding reminders to relax at

home and work ($\bar{x}$=1.6, s.d.=.90), keeping track of difficult social situtations and planning alternative responses ($\bar{x}$=1.7, s.d.=.81), and tape recorded guided relaxation practice sessions at home ($\bar{x}$=1.8, s.d.=1.04).

Insert Table 4 about here

Discussion

In our study, we examined the efficacy of a stress management training procedure for reducing distress in the form of anxiety and depression in parents of severely handicapped children. The results of the study suggest that stress management training can be added to the pool of interventions that have been found to be helpful to parents of handicapped children.

Analysis of descriptive measures showed that after random assignment, the groups were equivalent in regard to income, education, social support, stress, and the child's maladaptive behavior. The groups differed on the child's adaptive behavior; the treatment group's mean score on the BDS adaptive behavior measure was significantly lower than the control group's score. According to Breslau et al (1982), lower levels of adaptive behavior are associated with increased parental depression. Consequently, the difference between groups due to sampling probably made the improvement in parental depression more difficult to achieve.

Until recently, parent training procedures for parents of handicapped children have fallen into two general categories: behavior modification training and reflective counseling (Ehly, Conoley, &

Rosenthanl, 1985). Behavior modification treatment generally has aimed to teach skills to parents that allow them to change their handicapped child's problematic behaviors or adaptive skills (e.g. Snell and Beckman-Bell, 1984). Reflective counseling has often been provided to parents in group sessions that have aimed at reducing parents' feelings of isolation, eliciting emotional expression, providing information, and generating social connections with other parents (Shapiro, 1983). While these two approaches undoubtedly are helpful to many parents, they do not reflect fully the array of validated treatment procedures that behavioral psychologists have developed and tested during the past decade. Stress management training is one such intervention that holds promise as a way to help parents cope with the demands of raising a handicapped child.

Though our research focused on the efficacy of a "treatment package" of three components, it was apparent during the study that each of the three treatment components -- self-monitoring, relaxation, and cognitive modification -- was perceived by parents as contributing to the efficacy of the treatment package. All social validity ratings exceeded the scale mean of 1.5. Thus, all treatment components were generally perceived as "helpful", with several perceived as "extremely helpful". Variability for the highest rated components was relatively low, suggesting a fair consensus for these ratings. Variability was noticeably higher for the lowest rated components. This is not surprising in that the lowest ratings were associated with components that required participant effort outside of group meetings. Scheduling and implementing practice activities can be expected to be more difficult to accomplish for some parents than for others.

Self-monitoring activities appeared to be the most difficult for parents to complete reliably. However, based on participant verbal feedback during class sessions, they did provide parents with a better understanding of the sources of their distress and made them aware of the situations in which it would be helpful to apply the other stress management skills as Deffenbacher & Suinn (1982) have suggested.

The relaxation training appeared to be helpful to people as a way to relieve the physiological arousal and discomfort that is often associated with aversive events. Stoyva and Anderson (1982) have reviewed the wide range of psychosomatic problems that have responded favorably to various forms of relaxation therapy. They hypothesize that there are central physiological mechanisms that account for the efficacy of relaxation treatments. Specifically, they believe that relaxation training draws upon a natural and necessary physiological rest response that is associated with physical and emotional regeneration. Some informal evidence in our study provides support for such notions. For example, some of the parents reported that the relaxation training helped them with insomnia and tension headaches. Additionally, relaxation serves as an alternative response in problematic situations (Stoyva and Anderson, 1982). Several parents in our study reported that they were able to use brief forms of relaxation in situations that were troublesome with their handicapped child. For example, the parent of a physically disabled child realized from self-monitoring that she was extremely tense each morning before and during the task of brushing her child's teeth -- an activity that previously had preceded onset of her son's problem behaviors. She began to practice short forms of relaxation before brushing his teeth and reported both that she felt

better about the activity and that she believed her son to be better behaved.

The cognitive awareness and modification component of the program derives from extensive research that suggests that stressors are made up of aversive stimulus events and a person's appraisal of these events (Lazarus, 1984). For example, helping a child with toileting may be an onerous and stressful task for one parent, while the same task with the same child may be taken as a matter of course for the other parent. Whatever variables may be controlling this differential response to the same situation, it appears that the most accessible and practical way of helping a person who is distressed by the situation is to address their cognitive repertoire along with other response modes (Goldfried & Goldfried, 1974). Some of the parents in our experimental group reported that they were able to coach themselves to look at difficult situations differently and that this new set of internal responses helped them to be more relaxed or less upset in difficult situations. For example, the mother of a multiply handicapped child reported that, when faced with a sudden medical emergency she found it helpful as one of her coping responses to tell herself that she had lived through worse and that this situation was manageable and would soon pass.

Interpretation of the results on this study was limited by the fact that long term follow-up data were not collected. Additionally, the use of a multi-element treatment package does not permit an analysis of which components of the intervention account for which proportion of the change on dependent measures. It is possible that the provision of respite care and the support of the other members of the treatment group were the powerful aspects of treatment, although the extensive time and

energy that parents devoted to the stress management skills suggests that they were likely amongst the operative variables. Further research is needed to evaluate the long term efficacy of stress management training and to assess which components of the treatment are most effective.

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Table 1

Pretest and Posttest Scores for the Two Comparison Groups on the STAI-State Scale

	Pretest		Posttest		Adjusted
	Means	S.D.	Means	S.D.	Means
Experimental Group	41.5	10.13	35.2	9.6	34.44
Control Group	39.2	12.65	40.8	13.9	41.15

Table 2

Pretest and Posttest Scores for Two Comparison Groups on the STAI-Trait Scale

	Pretest		Posttest		Adjusted
	Mean	s.d.	Mean	s.d.	Means
Experimental Group	43.25	8.78	38.75	8.16	37.84
Control Group	40.89	10.37	41.52	12.40	43.73

Table 3

Pretest and Posttest Scores for the Two Comparison Groups on the Beck Depression Inventory

	Pretest		Posttest	
	Mean	s.d.	Mean	s.d.
Experimental Group	10.6	6.35	7.38	5.86
Control Group	7.36	4.94	9.00	6.06

Table 4

Evaluation of Stress Management Training Items with Average Response Rating and Standard Deviations

	Mean	s.d.
1. Respite care on meeting days	2.6	.64
2. The therapists' informational talks about stress and coping	2.5	.44
3. Guided relaxation practice during meetings	2.2	.86
4. Tape recorded guided relaxation practice sessions at home	1.8	1.04
5. Relaxation sessions at home without the audio tape	2.2	1.00
6. Recording stress levels and stressful events on daily logs	2.3	.64
7. Comfort checks	1.9	.79
8. Keeping track of difficult social situations and planning alternative responses	1.7	.81
9. Keeping track of thoughts that go with stress, criticising them, and coaching myself to think in other ways	2.1	.78
10. Hearing from other members of the group	2.7	.64
11. Adding reminders to relax at home and work	1.6	.90
12. Homework assignments	2.2	.71
13. Short forms of relaxation to do in public	2.2	.86
14. Would you recommend this program to other parents?	All respondents answered yes	